



U.S. Air Force (Steve Cline)

Transforming Joint Warfighting Capabilities

By SCOTT E. JASPER

The global war on terrorism has validated the need for accelerating military transformation. The national security strategy directed the process to examine how enemies may fight, rather than where and when, reaffirming a shift from threat-based to capabilities-based planning. Moreover, the Secretary of Defense instructed the Armed Forces to first "pursue the global war on terrorism" and second "strengthen joint warfighting capabilities." Those capabilities are critical in

deterring and defeating enemies that rely on surprise, deception, and asymmetric warfare.

Military transformation is the process of rendering previous methods of warfare obsolete by changes in operational concepts, organizational structures, and technologies. U.S. Joint Forces Command (JFCOM) and the Joint Staff are working under guidance from the Office of Force Transformation and the Chairman to improve joint warfighting capabilities through initiatives such as joint force command and control, dominant maneuver, and rapid decisive operations; standing joint force headquarters; and joint experimentation with emerging technologies in events such as Millennium

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Training Philippine soldiers, Enduring Freedom.

in experimentation developed the JMF concept, defined as a package of 20,000 personnel from designated component ready forces. It is augmented by supporting commands, coalition partners, and a center of excellence coordinated group of international, nongovernmental, and private sector organizations from which a joint task force commander can tailor task forces for a range of missions. The key realization of the joint mission force was that interoperability linkages are at the heart of increased JTF effectiveness, specifically data-sharing and command and control challenges. Thus strategies to improve operations must strengthen links between task force and component headquarters.

Leveraging transformation on the operational level to achieve interoperability is consistent with the American way of war and crisis resolution outlined in *An Evolving Joint Perspective*, recently approved by the Joint Requirements Oversight Council.

The architects of the JMF concept realized that relationships on joint and service headquarters staff levels foster trust and confidence in joint warfighting. PACOM established standing command and control relationships for crisis response by designating primary JTF headquarters, service or functional component commanders, and requirements for force structure and reaction times. The application of strategies to combine technological advances and organizational augmentation, doctrinal standardization, and mission-oriented training evaluations can provide near-term improvements that seriously change the conduct of joint warfare.

Compelling questions include which areas to focus on first, the best forums for testing experimentation strategies, and how to measure improvement. The immediate focus should be on fixing deficiencies in joint interoperability, then on capabilities to execute joint mission essential and service training tasks under future threat scenarios. Exercise and training venues sponsored by the Joint Staff can test capability initiatives with a regional audience. Assuring full interoperability across DOD requires

Fleet Combat Camera Group, Pacific (Edward G. Matens)

Challenge. Transformation documentation has identified various capabilities required to dominate across military operations, including standing, deployable command and control systems, rapidly deployable and sustainable mission-oriented and tailored joint forces, pervasive targeting, shared situational awareness, precision effects, strategic mobility, and layered force protection.

The challenge is systematically prioritizing, testing, and fielding broad capabilities while avoiding theoretical and bureaucratic pitfalls in concept and architecture developments. In addition, getting these capabilities to warfighters in a timely fashion is critical, particularly in the information age with its rapid and compressed changes. Service transformation roadmaps indicate that future development of robust platforms and potential capabilities include unmanned, stealthy, long-range sensor, and deep-strike systems to counter enemy strategies as well as other innovative technologies. However, only by solving joint system interoperability problems will the awesome power of joint synergy be achieved across the battlespace with these platforms and capabilities. Among lessons from Afghanistan is a realization that joint system interoperability is key to operational success.

The U.S. Pacific Command (PACOM) joint mission force (JMF) developmental experience can assist in identifying revolutionary breakthroughs that yield measurable shifts in joint warfare. The command approach is moving from visionary concepts toward simple, practical, implemental solutions to current interoperability problems. Spiral development with regional operational forces in joint exercises validates results among those charged with executing the intent of a commander and speeds the fielding of solutions to the hard spots that prevent seamless joint operations.

Joint Mission Force

Commander, Pacific Command, called for a seamless joint-combined response force with sufficient flexibility to meet national objectives in 1999. That force would be capable of accomplishing missions across a range of operations, from complex contingencies to humanitarian assistance. It could serve as the leading edge in a conflict. The intention was eliminating service barriers and segmented components. It also sought advances in speed of reaction, command, and decisionmaking, which commanders were expected to implement by fiscal year 2003.

Bimonthly seminars and a tabletop game with warfighters and experts

expanded venues such as distributed global command and control exercises and national training programs linked to regional commands. Recent proposals for a joint national training capability support this need. Success can be gauged by measures of effectiveness related to tempo, responsiveness, flexibility, and cost. The Joint Staff perspective offers clearly definable attributes. Future warfare and crisis resolution must be integrated, self-synchronized, continuous, simultaneous, distributed, effects focused, knowledge based, network centric, and nonlinear. By assigning metrics to these categories, an assessment of shifts in the conduct and character of war could be provided.

Defeating Enemy Strategies

Knowing how the other side might fight yields insights into the joint capabilities required to maintain a competitive advantage. Potential enemies could comprehend joint doctrine and refuse to fight on our terms. Their strategies could seek to dissuade, delay, or disrupt military intervention by the United States while raising the political, economic, and military costs. An enemy could use terrorism, commit atrocities, and leverage weapons of

insurgent, paramilitary, or guerrilla tactics could protract conflict and erode public support

mass destruction asymmetries at home and abroad while seeking surprise through delivery systems such as scuba divers, crop dusters, and container ships. They will attempt to counter asymmetrical U.S. strengths in power projection, space, stealth, precision, information operations, and strategic lift.

The principal enemy focus is likely to be countering access to the region of conflict. In the littoral, multi-layered coastal defenses consisting of submarines, small boats, anti-ship missiles, and mines could deny force deployment and concentration. Ballistic and cruise missiles could threaten bases, stocks, and ports. Over land, enemies could counter airpower superiority by integrated air defense systems,

global positioning, and surface-to-air missiles and anti-air artillery. They could deny precision targeting by concealment and deception and deny attack by hardening underground facilities, dispersing ground forces, and collocating with civilians.

Enemy strategies could include means to undermine national will at home and among allies. Misinformation campaigns that take advantage of the Internet and human exploitation methods that use hostages or refugees as human shields could manipulate public opinion. Likewise, insurgent, paramilitary, or guerrilla tactics such as systematic ambushes, hit and run attacks, and killing zones could protract conflict and erode public support. Attacks on infrastructure by computer network or biological agents that disrupt or destroy information, transportation, energy, economic, or other nodes could paralyze the Nation without channeling animosity against a visible enemy.

Understanding the depth of opposing capabilities provides rigor in crafting an examination. Falling barriers in cost and global marketing practices will grant enemies access to commercial off-the-shelf technologies such as wideband communications and high-resolution imagery. They will outsource, buy, or steal capabilities to fight in space and cyberspace, domains traditionally dominated by the United States. Joint warfighting capabilities need to be tested against this highly capable threat under possible conditions across the range of military operations. Achievement and sustainment of joint preeminence will not only ensure decisive response but also dissuade enemies from embarking on the road to conflict.

Interoperability Shortfalls

The joint mission force concept recognizes that an enemy may put a premium on continual assessment of developing crises and the ability to commit an effective, properly tailored, and fully integrated JTF in days, not weeks. Complex multinational military operations such as those in Somalia, Bosnia, Haiti, Kosovo, East Timor, and

Afghanistan also demonstrate the need for an effective multinational, multiagency approach to complement a robust and versatile joint force tool kit ready to be employed at a moment's notice. Humanitarian emergencies created by typhoons, earthquakes, or volcanoes may explode into a catastrophic stage in days, leaving little time for the international community to assemble a coherent response. A rapidly tailored, jointly trained, multiagency, multinational force will not just happen; it must be thoroughly developed, preferably before the crisis.

The Defense Planning Guidance for fiscal year 2004 directs regional commanders to create standing joint force headquarters by fiscal year 2005 in accordance with the lessons of Millennium Challenge. JFCOM envisions a flag officer-led, 55-member standing joint force command and control element (SJC²E) at each command, which would serve as a full-time core of functionally organized and skilled joint planners. The element would use standard operating procedures and command and control systems in a collaborative environment to perform contingency planning. The employment concept models the deployable JTF augmentation cell, which rapidly turns a JMF-type service headquarters into a joint team. However, the standing joint force command and control element would empower decision superiority for effects based operations through development of an operational net assessment based on a political, military, economic, social, infrastructure, and information analysis of the enemy.

PACOM planners considered establishing a standing joint force headquarters from theater assets but decided against it because of manpower constraints. They selected a hybrid concept of developing the joint command and control capabilities of designated single-service headquarters augmented by battle-rostered augmentees from other services. Planners focused on the fact that combined doctrine, command and control mechanisms, and shared training and experiences were lacking for rapidly assembling a



accessible links provide external access to both unclassified and classified sites, depending on the Internet security level, while keeping the procedures easily distributable to all official parties.

In late 2001, PACOM approved the standard operating procedures for mandatory use in all JTF exercises and operations. Besides standardizing procedures for complex interoperability-dependent tasks, it identifies activation and augmentation requirements, including the deployable augmentation cell that immediately provides key joint planners to service-based JTF and battle staff rosters that source critical personnel by service and specific skills. This cell has been in existence for years at PACOM, but it has now been refined and implemented with common procedures and collaborative tools. It is a potential precursor to the standing joint force command and control element.

Common headquarters procedures. The PACOM model has been selected as the prototype for developing common standard operating procedures for JTF headquarters, the basis of SJC²E. JFCOM has drafted procedures for review by unified commands

could serve as an integrating factor across service and command bounds. The capability for internal linkage using a compact disc provides unlimited capacity to

identify region-specific parameters such as command relations or communication activation templates while mandating procedures for complex tasks such as joint fires and missile defense. Applying joint doctrine and joint tactics, techniques, and procedures can solve interoperability challenges. As JFCOM continues to demonstrate the merits of experimental concepts in information management, fires coordination, net assessment, and effects planning, proven procedures must be spirally integrated for a common JTF headquarters. Acceptance of these new procedures by warfighters on the operational and tactical levels can be realized in workshops and exercises to facilitate implementation of standing joint force headquarters within two years.

Standardized Web management. A key component of information

military coalition. The joint mission force objective was crafted to enhance JTF speed of action, precision, and mission effectiveness. Achieving this objective began with identification of the top challenges to rapid, seamless joint and combined operations.

Input from theater staffs together with operational lessons and readiness reports produced an initial list. The challenges are JTF headquarters activation and augmentation; common standing operating procedures and collaborative tools; multilevel security procedures; a common operating picture; standard command, control, communications, computers, and intelligence (C⁴I); adequate training for complex interoperability issues; integrated force protection and rules of engagement; underdeveloped information operations; strategic lift forecasting; contingency contracting; and host nation support. The challenges were refined and prioritized in a second theater flag officer-led JMF wargame in May 2000. Conference members concluded that significant joint interoperability improvements come from routine interactions of commanders and staffs.

Implementing the Concept

Four primary strategies were created to improve on the challenges and implement the JMF concept: develop common procedures; develop effective C⁴I architecture through command

applying joint doctrine and joint tactics, techniques, and procedures can solve interoperability challenges

Develop common procedures. The first implementation strategy produced JTF procedures. They were established using diverse standard operating procedures and developed in functionally organized workshops. They were tested with joint task force and service component headquarters in a third JMF wargame and validated in Cobra Gold and Tandem Thrust. Totally joint standard operating procedures design starts with the intent of the commander, describes how the task force fights in boards and cells, details standardized internal staff procedures, and transmits information management techniques. This unique standard operating procedure is a compact disc linked with checklists, templates, and references for access to over 1,300 pages of data. Web

1st Combat Camera Squadron (Jeffrey A. Wolfe)

**Task Force 51,
Iraqi Freedom.**



U.S. Navy (Tom Daily)

management procedures is the Web site. Service sites lack consistency, prove difficult for training distributed and rotational users, and fall short in optimizing data access. The JMF site offers a simple intuitive layout and standard appearance for concise display and information in three clicks. Web centric information pull is sustained by links to supporting sites and pages. The site provides for the routine, timely, and remote manipulation of information content by subject matter experts. Realizing that the site architecture does not satisfy service-directed specifications, PACOM has promulgated detailed and required certification criteria. Certification guidance covers Internet or Web compatibility and the layout to include window size, color, typography, and graphic format. Further requirements specify site identification, global navigation structure using tabs, local navigation structure using scrolling lists, event awareness indicators for classification, current conditions and time zones, and functional enhancements such as search aids and self-service updating. Adapting these criteria to

the SJC²E Web site can generate information management standardization across the defense establishment.

Headquarters linkages. PACOM directed the development of separate multinational force procedures that are based on the JTF model but focus on multinational operations on the coalition or combined task force level. These procedures are more generic and include broad operational considerations that partners can readily implement. Overarching operational start points (common frames of reference) that include a lead nation concept, common command or control-coordination relationships, standardized combined task force headquarters organization, common planning and decisionmaking processes, and clarity of terminology set the foundation for unity of effort within the task force. The centrifuge for multinational force standard operating procedures development has been the PACOM multinational planning and augmentation team program, which focuses on developing a cadre of military planners from nations with Asia-Pacific interests who are capable of rapidly augmenting

a multinational force headquarters for crisis action situations.

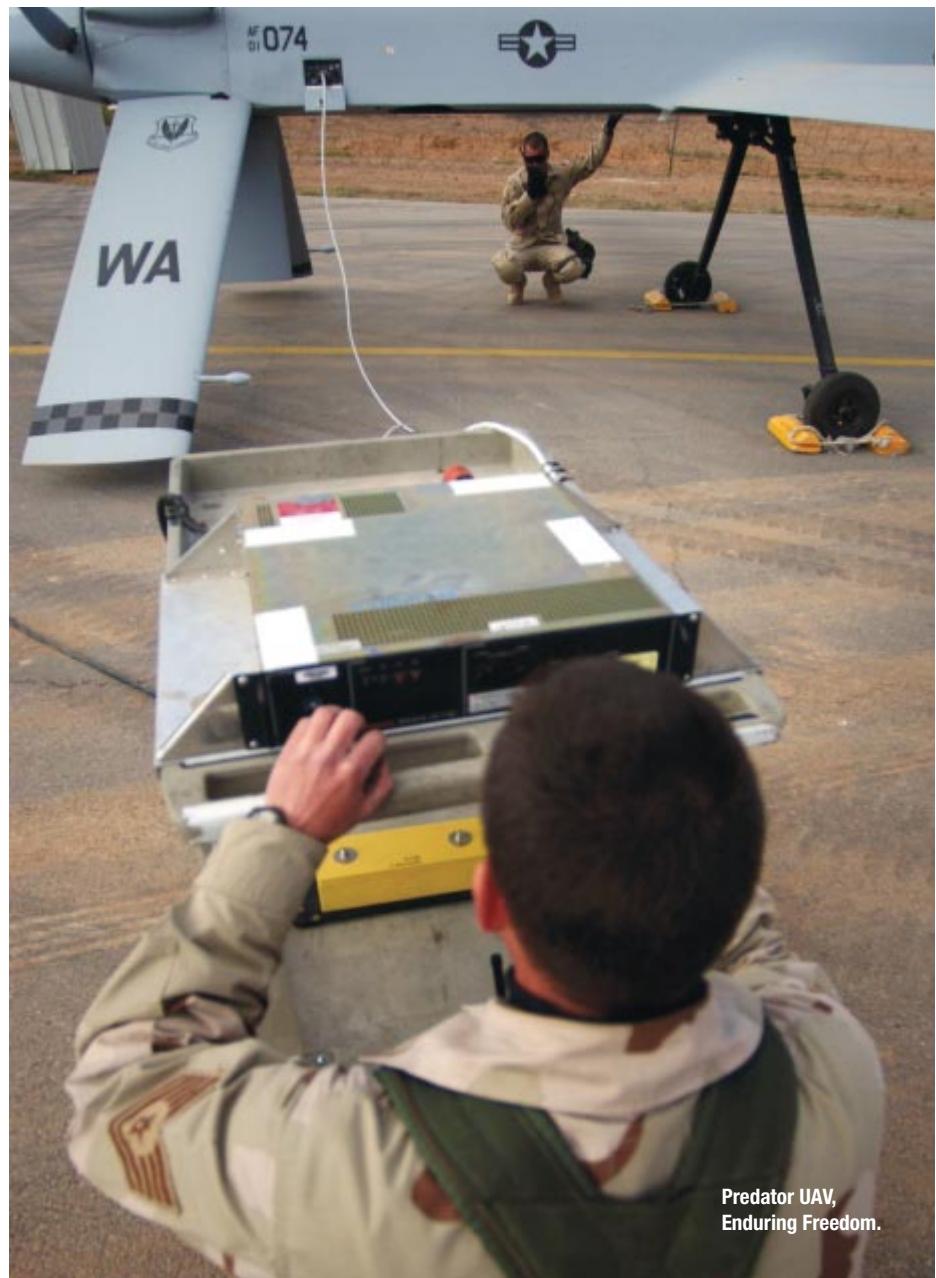
The team engages in concept development conferences on multinational force procedures in concert with semiannual workshops. Singapore hosted a recent exercise, Tempest Express Four, and acted as lead nation for combined task force headquarters with participation from 30 nations of the multinational planning and augmentation team. The focus was headquarters activation and crisis action planning procedures for a peacekeeping scenario that included combating terrorism. The Singaporean general who acted as event commander thought that Tempest Express was the best training he received prior to serving as combined task force commander in East Timor. By implementing multinational standard operating procedures across regional commands, planners can develop relationships and become adept at forming multinational, operational-level headquarters under common doctrine.

Effective C⁴I Architecture

The second implementation strategy established a series of command and control exercises (C²Xs) to develop C⁴I architecture. The program validates the command and control preparedness and proficiency of primary JTF and component commander staffs by executing basic procedures using fielded and experimental tactical systems and applications, documenting subsequent shortfalls and workarounds, and identifying solutions and associated timelines. The exercises are short, vignette-driven drills conducted originally as stand alone events and now in concert with major joint exercises. Focus and objectives alternate between communications networks and systems architectures, decision tools, and processes.

Initial exercises have progressively refined procedures and interoperability. For example, C²X One revealed that JMF-designated division headquarters need the standard C⁴I equipment normally apportioned on the corps level to act as force commander. Funding was identified for deployable global command and control system terminals and classified Internet routing network backbones. C²X Four tested the joint air operations center capability to create a common operating picture, use deployable video teleconferencing systems, and issue air tasking orders via a split Internet protocol configuration on the global broadcast system. Planning for C²X Seven was conducted with same-time Internet protocol-based voice and chat collaborative tools. This exercise will continue experiments with active bandwidth monitoring and control technology in support of Web centric information dissemination and knowledge management. These exercises continue to demonstrate the value of routinely testing, ensuring, and enhancing individual JTF unit capability to actually conduct command and control in expected crisis scenarios.

The barriers to connectivity between the JFCOM-designed and implemented standing joint force command and control element in regional commands on one side, and theater JTF



Predator UAV,
Enduring Freedom.

1st Combat Camera Squadron (Jeremy T. Lock)

service or functional component commanders on the other, can be eliminated by a worldwide C²X program. Deployable joint command and control is the solution for this element and is expected to provide standardized hardware and software for JTF-level command and control functions and support. Testing compatibility with permanent, transiting, or rotational component commands is imperative for interoperability. Draft requirements for deployable command and

control delineate a strategy for fielding technology. A global exercise program can facilitate technology induction as well as the coupling of command and control procedures in regional scenario vignettes.

The obvious winners of Millennium Challenge include the joint en route mission planning and rehearsal system near term as well as the joint



28th Public Affairs Detachment (Rhonda M. Lawson)

Stryker brigade combat team.

fires initiative. The former affords collaborative operating environment functions over international maritime satellite radio in airborne deployment operations. The latter has an integrated suite of situational awareness and knowledge-enabled tools to manage time sensitive targets. Inclusion of coalition partners in the global C²X program would facilitate multinational interoperability to include testing of PACOM-type combined operations wide area and Asia Pacific area network systems. The first encourages separate, simultaneous views of communities of interest while the second provides fire-wall-protected, multilevel access portals for posting and sharing information in a collaborative Web network.

Refine, Develop, Package

The third strategy led to the joint mission essential task list (JMEL), a unique document that delineates packaged, mission-oriented training standards common for JTF headquarters. Early JMF workshops postulated theater threat scenarios for 2003–2015 and identified the core missions that would constitute over 90 percent of the operations expected within the area of responsibility. Based on core competencies, specific missions were assigned to

three primary designated JTF headquarters: I Corps, Seventh Fleet, and III Marine Expeditionary Force.

Mission essential tasks with consolidated standards were derived from sample scenarios by the JTF staffs for forcible entry or foreign consequence

creating universal metrics could furnish quantitative measures for Joint Vision 2020 concepts

management. The joint mission essential task list was approved for immediate and mandatory use in all PACOM exercises and operations in 2001. It offers a basis for developing training objectives and articulating operational requirements. Command determination of specific criteria (the actual level of performance such as hours, days, or percentage) for standards, based on mission analysis, provides a benchmark for measuring unit performance. In the end, a performance matrix grades JTF headquarters readiness.

Mission-oriented tasks with criteria could be translated into measures of performance for evaluating the JFCOM standing joint force command and control element-related experimentation. Specific technological, organizational, or procedural initiatives would

be matched to key tasks such as command and control or fires, with corresponding criterion-derived metrics to evaluate initiative performance in theater-specific scenarios. Building on the PACOM approach, the Joint Staff is working on a set of joint capability descriptions for approval by the Joint Requirements Oversight Council. By analyzing military operations across commands and identifying an array of JMEL-based metrics, standards can be provided for the council to compare recommendations for change in doctrine, organization, and technology. Creating universal metrics for joint force development could furnish quantitative measures for *Joint Vision 2020* concepts and architectures. In addition, future warfare and crisis resolution attributes formerly identified could be both linked to tasks and assigned metrics to measure improvement.

Implementation will link joint command and staff planning and execution and address joint training. Deliberations on improving interoperability examined mandatory alignment of joint and service rotational readiness periods and multiple service training events but found them too difficult because of tempo, funding, and simulation limitations. New networked architectures could bring together forward JTF headquarters (such as Seventh Fleet) with distributed components at major training centers to perform high intensity, combat-related tasks such as fire support or battlespace maneuver. Simulation can augment live force shortfalls while exploring conceptual revolutionary platforms, such as cruise missile submarines, future combat system platforms, or advanced theater transport aircraft.

Integrating Experimentation

The fourth strategy modified PACOM training by integrating experimentation into exercises for evolutionary gains in warfighting. Mature near-term technology insertions could be evaluated for accelerated fielding at forward deployed headquarters. Experimenting while exercising leads to spiral technology enhancements that can aid seamless JTF operations. For example,

**Patrolling Souda Bay,
Crete, Enduring
Freedom.**



U.S. Navy (John Gaffney)

during Cobra Gold '02 in Thailand, conducted with III Marine Expeditionary Force as deputy combined task force headquarters, a number of technologies were exposed to operational scrutiny, with use of new procedures for JTF headquarters and JMEL standards (26 specific tasks).

To meet the challenge of C⁴ equipment and procedures in Cobra Gold, installation of the bandwidth monitoring and control system measured the volume of combined operations-wide area network applications and demonstrated utility to potentially control targeted applications, while the theater automated profiling system visually represented civil-military and information operations objectives through relevant vectors that provided progressive views of key battlespace metrics.

Against the challenges posed by a common operating picture, joint fires, and intelligence, surveillance, and reconnaissance, the installation of automated deep operations coordination system terminals enabled situational awareness and report visualization for Special Operations Forces. For the difficulties of common collaborative tools, the introduction of defense collaborative tool suite servers enabled NetMeeting chat, voice, and video collaborative sessions, with server etiquette and protocol. Exercise lessons revealed the

need for a formal process of assessing experimentation. Joint training and experimentation specialists assigned to each regional combatant command could assist in grading technology insertion capacity to achieve JMEL criteria, eventually enhancing implementation of the standing joint force command and control element concept, which is heavily dependent on emerging technology.

Operational Experimentation

These implementation strategies have achieved tangible advances in JTF speed, precision, and effectiveness primarily because they were developed and executed by warfighters who depend on JMF-related policies, procedures, and technology. Developing the SJC²E concept in exercises with real forces will assure headquarters activation and planning. Focusing on interoperability in complex tasks under difficult conditions will guarantee decisive action joint force execution. For example, the joint mission essential task list added responsibilities for examining doctrine linked to technology to integrate and synchronize fires and maneuver. Experimentation on procedures and technologies is needed to facilitate coordination of fire control measures

and gain better battlespace situational awareness in rugged terrain, urban jungles, and rural camouflage.

The PACOM approach to finding simple and practical solutions to interoperability problems and integrating them into exercises will better prepare operational forces. New technologies and processes must be balanced with service training requirements. However, warfighter endorsement of prototype joint experimentation will accelerate technology acquisition and procedural adaptation, paramount to ensuring joint preeminence. The spiral testing and fielding of initiatives in joint and multinational exercises, to include live fire events, will facilitate transparency and confidence among the joint and combined forces responsible for responding to a crisis.

Implementation strategies for the joint mission force highlight proven ways to prioritize, test, and field new capabilities. Efforts by U.S. Pacific Command to develop the prototype for the joint mission force headquarters confirm the value of the JFCOM standing joint force command and control element for interoperability. Future application of this element should facilitate rapid implementation across regional commands. Subsequent identification and correction of barriers to interoperability of the element through expanded national and global training and experimentation venues will assure the vital transformation of joint warfighting capabilities. **JFQ**